

Name _____

Show your work, and circle your answers and use sig figs to receive full credit.

1. An electron is accelerated from rest through a potential to a velocity of 3.44×10^6 m/s. What potential was required?

2. A proton is accelerated from rest through 115 kV. What is its velocity?

3. A proton accelerated from rest is going 7.20×10^6 m/s. Through what voltage was it accelerated?

4. What is the velocity of an electron accelerated through 28.0 Volts from rest?

5. A $+180. \mu\text{C}$ charge with a mass of 170. g is approaching another fixed $+150. \mu\text{C}$ charge directly. If it is moving at a speed of 41.0 m/s when it is 2.00 m away, what is its speed when it is 1.00 m away? How close will it get before it is stopped by the repulsion? What will be its speed later when it is very far away? Assume no other force acts on the moving charge.

6. A 3.20 g rifle bullet leaves the surface of the moon with a speed of 1000. m/s going straight up. a) What is the greatest height it reaches? b) What is its height when it is going 500. m/s? c) What velocity is it going when it reaches a height of 300. km above the moon's surface? The mass of the moon: 7.35×10^{22} kg, The radius of the moon: 1.737×10^6 m